



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,978	12/10/2003	Kazuhito Imai	12014-0023	5105
22902	7590	03/09/2005	EXAMINER	
CLARK & BRODY			ZIMMERMAN, JOHN J	
1090 VERMONT AVENUE, NW			ART UNIT	
SUITE 250			PAPER NUMBER	
WASHINGTON, DC 20005			1775	

DATE MAILED: 03/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/730,978

Applicant(s)

IMAI ET AL.

Examiner

John J. Zimmerman

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 11, 12 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 5 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 11, 12 and 30-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

SECOND OFFICE ACTION

Amendments

1. This Second Office Action is in response to the correspondence titled "AMENDMENT" received December 8, 2004. Claims 1-8, 11-2 and 30-32 are pending in this application. Claims 1-3, 6-8, 11-12 and 30-32 drawn to elected species 1 (barrier layer is an oxide layer based on an oxide of zinc) are currently being prosecuted.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-8, 11-12 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hotta (Japanese publication 04-325665), in view of Omiya (U.S. Patent 6,312,536) or Sudo (U.S. Patent 4,314,862).

Art Unit: 1775

4. Hotta discloses providing a zinc oxide containing coating on the surface of a galvanized steel sheet in the amount of 20-3000 mg/m² (e.g. see paragraph [0007]). Coating weights and coating compositions are given in paragraph [0012]. The presence of the oxide coating of Hotta would inherently act as a barrier to zinc vaporization during heating. Hotta may differ from the rejected claims in that Hotta may not specify the steel compositions to use for the galvanized steel sheets. Hotta, however, does disclose that the galvanized products must have excellent press formability and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to the prior art in order to select a steel composition that is known to have excellent press formability as well as good compatibility with hot dipped galvanized coatings. On this issue, Omiya discloses steel compositions to use in galvanized products having excellent press formability and platability (e.g. column 1, lines 5-20). Omiya's steel is composed of 0.02-0.2 wt.% C, 1.5-2.4 wt.% Mn, 0.03-1.5 wt.% Cr, less than 0.01 wt.% Si and up to 0.0005 wt.% B (e.g. see column 2, line 43 - column 4, line 61; Table 1). Furthermore, Sudo discloses steel compositions to use in galvanized products having excellent press formability and good galvanizing properties (e.g. column 1, lines 7-12). Sudo's steel is composed of 0.02-0.15 wt.% C, 1.5-2.5 wt.% Mn, 0.2-1.5 wt.% Cr, less than 0.2 wt.% Si and 0.0005-0.01 wt.% B (e.g. see column 2, lines 34-49; Table 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the steel compositions of Omiya and Sudo for the steel substrates of Hotta because Hotta clearly teaches that his galvanized products must have excellent press formability and Omiya and Sudo disclose steel compositions having excellent press formability as well as good compatibility with hot dipped galvanized coatings. Regarding the overlap of the composition ranges of Omiya and Sudo with

Art Unit: 1775

the claimed compositions, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the references because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 USPQ 549.

5. Claims 1-3, 6-8, 11-12 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomoto (Japanese publication 02-190483), in view of Omiya (U.S. Patent 6,312,536) or Sudo (U.S. Patent 4,314,862).

6. Nomoto discloses providing a zinc oxide coating on the surface of a galvanized steel sheet. The weights of ZnO formed on the sheet are shown in Table 1 and the range is described as between 30-3000 mg/m² ZnO per side (e.g. see left side column on page 531). The presence of the oxide coating of Nomoto would inherently act as a barrier to zinc vaporization during heating. Nomoto may differ from the rejected claims in that Nomoto may not specify the steel compositions to use for the galvanized steel sheets. Nomoto, however, does disclose that the galvanized products must have superior press formability and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to the prior art in order to select a steel composition that is known to have good press formability as well as good compatibility with hot dipped galvanized coatings. On this issue, Omiya discloses steel compositions to use in galvanized products having excellent press formability and platability (e.g. column 1, lines 5-20). Omiya's steel is composed of 0.02-0.2 wt.% C, 1.5-2.4 wt.% Mn, 0.03-1.5 wt.% Cr, less than 0.01 wt.% Si and up to 0.0005 wt.% B (e.g. see column 2, line 43 -

Art Unit: 1775

column 4, line 61; Table 1). Furthermore, Sudo discloses steel compositions to use in galvanized products having excellent press formability and good galvanizing properties (e.g. column 1, lines 7-12). Sudo's steel is composed of 0.02-0.15 wt.% C, 1.5-2.5 wt.% Mn, 0.2-1.5 wt.% Cr, less than 0.2 wt.% Si and 0.0005-0.01 wt.% B (e.g. see column 2, lines 34-49; Table 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the steel compositions of Omiya and Sudo for the steel substrates of Nomoto because Nomoto clearly teaches that his galvanized products must have superior press formability and Omiya and Sudo disclose steel compositions having particularly good press formability as well as good compatibility with hot dipped galvanized coatings. Regarding the overlap of the composition ranges of Omiya and Sudo with the claimed compositions, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the references because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 USPQ 549.

7. Claims 1-3, 6-8, 11-12 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toki (Japanese publication 2000-328220), in view of Omiya (U.S. Patent 6,312,536) or Sudo (U.S. Patent 4,314,862).

8. Toki discloses providing a zinc oxide containing coating on the surface of a galvanized steel sheet in the amount of 50 mg/m² (e.g. see paragraph [0029]) and the coating weight is 45 g/m² (e.g. see the example in paragraph [0043]). The presence of the oxide coating of Toki

Art Unit: 1775

would inherently act as a barrier to zinc vaporization during heating. The coating can be a galvanized coating and can contain 8-15 wt.% Fe (e.g. see paragraph [0027]). Toki suggests that the steel composition of the substrate can be any well-known cold rolled steel plate and well-known hot rolled steel plate (e.g. see paragraph [0025]). Toki may differ from the rejected claims in that Toki may not specify examples of steel compositions having the specific claimed compositions to use for the galvanized steel sheets. Toki, however, does disclose that any well-known cold rolled steel plate and well-known hot rolled steel plate can be used and that the galvanized products must have excellent press formability (e.g. see paragraph [0001]) and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to the prior art in order to select particular steel compositions that are known to have excellent press formability as well as good compatibility with hot dipped galvanized coatings. Omiya discloses steel compositions to use in galvanized products having excellent press formability and platability (e.g. column 1, lines 5-20). Omiya's steel is composed of 0.02-0.2 wt.% C, 1.5-2.4 wt.% Mn, 0.03-1.5 wt.% Cr, less than 0.01 wt.% Si and up to 0.0005 wt.% B (e.g. see column 2, line 43 - column 4, line 61; Table 1). In addition, Sudo discloses steel compositions to use in galvanized products having excellent press formability and good galvanizing properties (e.g. column 1, lines 7-12). Sudo's steel is composed of 0.02-0.15 wt.% C, 1.5-2.5 wt.% Mn, 0.2-1.5 wt.% Cr, less than 0.2 wt.% Si and 0.0005-0.01 wt.% B (e.g. see column 2, lines 34-49; Table 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the particular steel compositions of Omiya and Sudo for the steel substrates of Toki because Toki clearly teaches that any well-known steels can be used in his invention and that his galvanized products must have excellent press formability. Omiya

Art Unit: 1775

and Sudo disclose steel compositions having excellent press formability as well as good compatibility with hot dipped galvanized coatings. Regarding the overlap of the composition ranges of Omiya and Sudo with the claimed compositions, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the references because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 USPQ 549.

9. Claims 1-3, 6-8, 11-12 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toki (Japanese publication 2000-328221), in view of Omiya (U.S. Patent 6,312,536) or Sudo (U.S. Patent 4,314,862).

10. Toki discloses providing a zinc oxide containing coating on the surface of a galvanized steel sheet in the amount of 1-50 mg/m² (e.g. see paragraph [0019]) and the coating weight is 30-70 g/m² (e.g. see paragraph [0034]). The presence of the oxide coating of Toki would inherently act as a barrier to zinc vaporization during heating. The coating is a galvanized coating containing 8-15 wt.% Fe (e.g. see paragraph [0018]-[0022], [0037]). Toki suggests that the steel composition of the substrate is preferred to be super-low carbon steel but also that low-carbon steel, various kinds of high tensile strength steel, cold rolled or hot rolled steels are usable (e.g. see paragraph [0034]). Toki may differ from the rejected claims in that Toki may not specify detailed example compositions of non-super-low carbon steel compositions that would be useful in his invention. Toki, however, does disclose that other steel compositions can be used in his

Art Unit: 1775

invention and that the galvanized products must have excellent press formability (e.g. see paragraph [0050]) and therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to look to the prior art in order to select particular steel compositions that are known to have excellent press formability as well as good compatibility with hot dipped galvanized coatings. Omiya discloses steel compositions to use in galvanized products having excellent press formability and platability (e.g. column 1, lines 5-20). Omiya's steel is composed of 0.02-0.2 wt.% C, 1.5-2.4 wt.% Mn, 0.03-1.5 wt.% Cr, less than 0.01 wt.% Si and up to 0.0005 wt.% B (e.g. see column 2, line 43 - column 4, line 61; Table 1). In addition, Sudo discloses steel compositions to use in galvanized products having excellent press formability and good galvanizing properties (e.g. column 1, lines 7-12). Sudo's steel is composed of 0.02-0.15 wt.% C, 1.5-2.5 wt.% Mn, 0.2-1.5 wt.% Cr, less than 0.2 wt.% Si and 0.0005-0.01 wt.% B (e.g. see column 2, lines 34-49; Table 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the particular steel compositions of Omiya and Sudo for the steel substrates of Toki because Toki clearly teaches that any well-known steels can be used in his invention and that his galvanized products must have excellent press formability. Omiya and Sudo disclose steel compositions having excellent press formability as well as good compatibility with hot dipped galvanized coatings. Regarding the overlap of the composition ranges of Omiya and Sudo with the claimed compositions, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the references because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 USPQ 549.

Response to Arguments

11. Applicant's arguments with respect to rejected claims have been considered but are moot in view of the new grounds of rejections. The new rejections were necessitated by the amendments presenting a new combination of silicon and carbon limitations in the base steel material that was not present in the previously presented claims. It should be noted, however, that applicant's specification specifically states that the "base steel of the plated steel material for hot press forming according to the present invention *is not critical* as long as it has good wettability with molten plating metal when subjected to zinc-based plating by hot dipping and good adhesion of the plated coating thus formed" (e.g. see page 8, lines 3-6, emphasis added). Therefore, this appears to be an admission by applicant of non-criticality of the base steel material as long as it meets the wettability and adhesion requirements for hot dipped zinc-based coatings. Since all the applied references are specific to hot dipped galvanized steel coatings, they would be understood to satisfy the wettability and adhesion criteria for the steel substrate.

Conclusion


12. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. The current combination of silicon and carbon limitations in the base steel material was not present in the previously presented claims. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

Art Unit: 1775

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

14. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John J. Zimmerman
Primary Examiner
Art Unit 1775

jjz
March 3, 2005